

GENERAL COMMENTS

- 1) I recommend that a high purity germanium (HPGe), gamma ray detector developed for high resolution spectroscopy be utilized instead of the FIDLER. The HPGe has a broad energy range, exhibits high resolution, excellent gain stability, moderate area averaging, and the ability to identify and quantify all gamma ray emitting radionuclides. The HPGe system is at least an order of magnitude better than the FIDLER system. Coordinate this effort with Ron Reiman, EG&G Rocky Flats, Inc (ext. 5946). Input to the workplan should also be provided by Mr. Reiman.
 - 2) Procedures for soil samples collected from soil borings should be similar to procedures used at the other OUs at the RFP (i.e., OUs 1 and 2). Thus, I recommend that a VOC sample be collected for laboratory analysis every other two-foot interval. Also, ring samplers should be used for VOCs to minimize loss of volatile compounds. All other samples collected for laboratory analysis (semi-VOCs, PCBs/pesticides, metals, radionuclides and other inorganics) should be composited over six-foot intervals. (See page 5-18 of the Phase II RFI/RI Work Plan Alluvial, Manual No. 21100-WP-OU 02 1, Volume I - Text and Attachments by EG&G Rocky Flats, Inc dated July 25, 1991.)
 - 3) IHSSs 174, 175, 176, 177, 182, 213 and 214 should have surficial soil sampling programs in the workplan to define the areal extent of surface soil contamination. The grid used for the surficial soil sampling should be based on risk considerations including soil ingestion, particulate/vapor inhalation, transport to surface water bodies and transport to groundwater. Dennis Smith of EG&G Rocky Flats, Inc (ext. 5958) should be consulted for grid-size selection. I recommend that the hot spot searching technique described in Section 9 of the EPA document entitled "Methods for Evaluating the Attainment of Cleanup Standard, Volume I: Soils (EPA 230/02-89-042)" or an equivalent method should be used for radiation screening, soil gas screening and surficial soil sampling grid-size selection.
 - 4) Especially for the surficial soil samples, I recommend that a mobile, on-site laboratory be utilized to speed up the analysis (and also lower the cost of the analysis) so that the surficial soil sampling results can guide the location of soil borings. John Dick, EG&G Rocky Flats, Inc (ext. 5950) should be consulted regarding mobile laboratories and analytes that can be handled. Note that this is particularly important for metals and semi-VOCs since the screening techniques cannot be used for these substances. Also, on-site laboratories (e.g., 881 hillside) should be considered if mobile laboratories are not available or cannot handle a particular class of analytes. In this case, it will be crucial to obtain approval from CDH and EPA due to a possible public perception problem.
- Should a mobile, on-site laboratory be used, it will be necessary to split samples with an EPA-approved contract laboratory so that the DQO analytical level for the mobile laboratory can be raised to Level III which is adequate for risk assessment, evaluation of remedial alternatives, remedial design, etc. Pages 5-15 to 5-22 of the EPA document entitled "Data Quality Objectives for Remedial Response Activities, Example Scenario RI/FS Activities at a Site with Contaminated Soils and Ground Water (EPA/540/G-87/004)" can be used as a guide. Again, John Dick of EG&G Rocky Flats, Inc should be consulted on this.
- 5) The workplan calls for the installation of 12 new groundwater monitoring wells. Care should be taken that the drilling of these wells does not result in cross-contamination of groundwater in areas where soil contamination does not extend to the water table's minimum seasonal depth. In addition, if it is possible, the installation of these wells should be delayed until laboratory analysis of soil samples confirms that contamination of groundwater is a possibility. The use of a mobile, on-site or an RFP laboratory would very likely allow us the time to make this evaluation prior to installing the proposed wells.

6) I am concerned that possible inadequate background soil characterization of metals and radionuclides may make IHSSs 129, 174, 175, 176, 177, 182 and 213 appear to be potentially contaminated with these elements. Consult with both Iggy Litaor (ext. 5170) and Larry Woods (ext 5417) of EG&G Rocky Flats, Inc. on the adequacy of the existing background data for soil. Also, have them review the metals and natural radionuclide data in this workplan in light of the existing soil background data. If there is a technically valid way to state that much of the metals and radionuclide soil data in excess of background is not the result of inadequate storage/disposal practices at the RFP, it should be so stated in the workplan. If an Order one soil survey is planned for the RFP and will be of value to the OU 10 Phase I RFI/RI, it should be described or referenced in this workplan.

LOCATION

SPECIFIC COMMENTS

p vii	Section 5.7 - Task 7. Both the development and screening of remedial alternatives need to be conducted concurrently with the Phase I RFI/RI; however, the detailed analysis of remedial alternatives is not appropriate for a Phase I RFI/RI. I suggest that this portion be deleted from the workplan.
p ES-1, par 1, line 2	Insert "CERCLA" before "Remedial Investigation"
p 1-3, par 1	Add sediment and biota to line 1
p 1-3, par 2	Include EPA (1987) DQO guidance documents
p 1-4, Sec 1.2, par 1	The Community Relations Plan and Quality Assurance Project Plan should be referenced in the text
p 1-5, par. 1, line 2	Insert "and radioactive" between "hazardous" and "substances".
p 1-5, par 2, bullet 3	"Endangered" should be "threatened and endangered"
p 1-8, Sec 1.3.3.2	Is the RFP located 16 miles east of the continental divide?
p 1-9, Figure 1.3-1	Indiana Street and Hwy 128 should be posted on this figure
p 1-10, par 1 and 2	Include numerical data on temperature, wind (velocity, direction and frequency) and evaporation
p 1-13	Add a paragraph on threatened and endangered species, Colorado species of concern and federal category 1, 2 and 3 species
p 1-14, par 3, line 2	Include wetland vegetation

p 1-15, Sec. 1 3 3 6, par. 1, line 3 and par 2, line 1	State the source of the 1973 Colorado Land Use Map and include in references section
p 1-16, par 3, line 3	State the source of the 1987 Colorado agricultural statistics and include in references section
p 1-18, Figure 1 3-4	Include a legend with lithology symbols as shown on the stratigraphic section
p 1-19, par 1 line 3, par 2, lines 2 and 4	Include the measured ranges of hydraulic conductivity for the alluvium.
p. 1-20, par. 1 and 3	Include the range of hydraulic conductivity for the Arapahoe and Laramie sandstones
p 2-14, Figure 2 1-5	Inorganics should be mg/kg for soils (see legend)
p 2-22, par 1	Complete names for MEK, EDC, Eth Ac, TCA and PCE should be given on this page.
p 2-27, Sec 2 1 4 2, par 1, line 9	Is silicon a metal?
Figure 2 1-10	Inorganics should be mg/kg for soils (see legend).
p 2-46, Sec 2 1.5 4, par 1, line 3	Nitrates, nitrites are not metals
Figure 2 1-12	Inorganics should be mg/kg for soils (see legend).
Figure 2 1-15	Inorganics should be mg/kg for soils (see legend)
Figure 2 1-18	Inorganics should be mg/kg for soils (see legend)
p 2-92, sec 2 1 9 1, par 2, line 3	State in the text the location where the removed soil was taken. If it is not known, it should be stated
Figure 2 1-23	Inorganics should be mg/kg for soils (see legend)
p 2-108, par 1, lines 3 and 4	State when the drain holes were plugged.
p 2-128, par 3, line 5	Should read 1 38 times $10^{(-3)}$

Figure 2 1-35	Inorganics should be mg/kg for soils (see legend)
p 2-139, par. 4)	How much saltcrete was dispersed by wind and precipitation prior to vacuuming? Was all the saltcrete recovered? State in the text.
p 2-146, Sec 2 2 1 2, par 1, lines 5, 6 and 7	Where were the contaminated clean up materials taken?
p 2-148, Sec 2 2 1.5, line 4	Include contaminated sediments
p 2-149, Sec 2 2 2 5, line 5	Include contaminated sediments.
p 2-151, Sec 2 2 3 5	Include contaminated sediments
p 2-153, Sec 2.2 4 4, lines 7 and 8	The last sentence should be deleted as no air pathway analysis consistent with CERCLA guidance has been conducted or included in the text to verify this
p 2-153, Sec 2 2 4 4, par 2, line 2	Due we have adequate data on the organic content of the soils to support the statement "lack of adsorption by the soil"?
p 2-155, Sec 2.2 5 5, line 3	Include contaminated sediments with regard to aquatic biota.
p 2-161, Sec 2 2 9 5	Include contaminated sediments
p 2-167, Sec 2 2 13 5 and Sec 2 2 14 2, line 4	Include contaminated sediments
p 2-168, Sec. 2 2 14 4 and 2 2 14 5	Include contaminated sediments
p 2-169, Sec 2 2 15 2, line 7	Insert "ditch and" before "drainages are also likely ".
p 2-170, Sec 2 2 15 5, line 5	Include contaminated sediments
p 2-171, Sec 2 2 16 5, line 5	Include contaminated sediments

p 3-1, Sec 3 0	Insert a paragraph on the potential applicability of action and clean up levels from RCRA Subtitle C, Subpart S, once the regulations are finalized. This is likely to occur prior to the completion of the Phase I RFI/RI report for OU 10.
p 4-5, Sec 4 2 1, par 2	This conflicts with pages ES-2 (par 4 and 5)
p 4-8, Sec line 4	Include surface water and asphalt/concrete (see 4.2 2, par 2, page ES-2, par 4)
p 4-9, Table 4-2	The EPA (1987) DQO guidance manuals indicate that analytical level three is suitable for all the data uses in this table. Is analytical level two suitable for evaluation of alternatives?
p 4-10, par 3	Are the last two sentences consistent with other RFP workplans? Have CDH and EPA approved this language?
p 5-1, Sec 5 2, line 5	Was the final CRP released in August, 1991? If so, state in text
p 5-2, Sec 5 3	Include surface water, sediment and asphalt/concrete samples in text.
p 5-4, Sec 5 5 2	Include asphalt/concrete, surface water and sediment samples.
Figure 5 6-1	Label the baseline risk assessment portion of this figure.
p 5-8, par 2	State in the text that Table 5-1 is not all-inclusive
p 5-11, par 2, line 5	Insert "sediments" and delete "the environment"
p 5-11, par 2, bullets	The bullets should be consistent with the IAG, Attachment II, Table 5, page 35 (item no 2 under required action) For bullet no three, insert "biota".
p 5-16, Sec 5 9 1, line 4	Replace "soil contamination investigation" with "Phase I RFI/RI".
p. 5-17, line 1	Insert "surface water, sediment, groundwater and asphalt/concrete" between "soil" and "contamination".
p 7-1, Sec 7 1	The objectives should be consistent with those listed in the IAG and pages ES-1 and 4-3 to 4-5
p 7-3, Table 7-1	One sediment sample collected at IHSSs 124, 181, 182, 207 and 208 is insufficient statistically. A minimum of two sediment samples should be collected for analysis at these IHSSs. Also, two sediment samples are not nearly adequate for IHSS 176 considering its size. A statistically sound number of samples should be proposed.

One surface water sample collected at IHSS 182 is insufficient statistically. A minimum of two surface water samples should be collected for analysis at this IHSS. In addition, I recommend that more than two surface water samples be collected for analysis at IHSS 176 due to its large size

All newly installed monitoring wells should be sampled a minimum of two rounds during the Phase I RFI/RI One sample during Phase I is insufficient

p 7-5, par. 2

I recommend that this paragraph be rewritten Abiotic and biotic samples are not analyzed for contaminants needed by the baseline risk assessment Rather, the samples are analyzed for a rather broad parameter list and chemicals of concern for the risk assessment are a subset of these chemicals This paragraph is putting the cart before the horse

In the last sentence, a single sample for determination of TOC and soil pH is not adequate statistically A statistically valid number of samples should be proposed. Also, soil profiles should be considered for pH measurements so that they can be related to specific soil horizons

p 7-5, Sec
7.3.1, par 1

In the last sentence, consideration should be given to adding ethylbenzene, PCE and carbon tetrachloride to the analyte list for soil gas.

p 7-5, Sec
7.3.1, par 2

List the specific radioactive contaminants of interest. The rad survey should be a separate paragraph from the soil borings

p 7-7 Sec
7.3.2

See my comment regarding p 7-5, Sec 7.3.1, par. 1 above

p 7-9, par 1
and par 2

I recommend that total petroleum hydrocarbons (TPH) be added to the analyte list for soils and groundwater.

p 7-9, par 2

Due to the possibility of LNAPLs on the water table, I recommend that consideration be given to having 4 feet of screen above the water table and 6 feet below it.

p 7-10, par
1, last sent
and par 2

I recommend that TPH be added to the analyte list for soil and groundwater

p 7-12, par 2

State the analytes for soils It should include TPH.

p 7-12, par 3

Add TPH to groundwater analyte list.

Figure 7.3-4

Soil gas stations should be positioned in the interior of the dumpster storage area

p 7-14, par 3

Care should be taken that the soil boring will not result in cross-contamination of the aquifer This is a possibility when drilling in an IHSS

p 7-16, par 2

Add TPH to the soil analyte list

p 7-16, par. 3	What will the three existing wells be sampled for? State in the text
p 7-18, par 2 and 3	Add TPH to soil and groundwater analyte list
p 7-20, par 1	State why a soil gas survey is not planned at this IHSS.
p 7-20, par 2 and 3	Add TPH to soil, sediment and groundwater analyte list.
p 7-20, Sec 7 3 9	State why a soil gas survey is not planned at this IHSS
p 7-22, Sec 7 3 10	What impact will the drain hole outfall described on page 2-108, par 1, have on the planned activities?
p 7-30, par 2 and 3	Add TPH to soil and groundwater analyte list
p 7-32, par 2, lines 5 to	Surficial sediment samples should also be considered for collection in addition the surface samples at the soil boring locations This will provide better resolution of potential contamination
p 7-39, par 1, lines 2 and 3	Soil samples collected for VOC analysis should be in ring samplers which are capped and sealed upon recovery
p 7-40, par 3, line 1	Change to "wells will be developed between 24 hours and 2 weeks after completion"
p 7-43, par. 4	Add ethylbenzene, PCE and carbon tetrachloride to the soil gas analyte list.
Table 7-2, p 3 of 7	Replace "metals" with "volatile organic compounds"
Table 7-3	See my previous comment for p 7-43, par 4
Table 7-6	Why are no trip blanks being used for organic analysis of solids (i e., soils, sediments)? Is one equipment blank per 20 samples consistent with existing RFP workplans approved by EPA and CDH?
p 8-2, line 1	Change from "COCs" to "chemicals of concern (COCs)".
p 8-3	include OSWER Directive 9355 0-30, "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," dated April 22, 1991
Figure 8 1-1, p 8-5	See comment for Figure 5 6-1, page 5-5

- p 8-6, 2nd
bullet
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- p 8-7, lines
6 and 7
- p 8-9, line 1
- p 8-10, par
3, line 5
- p 8-10, Sec
8 3 2
- p 8-11, Sec
8 3 5, line 2
-) p 8-11, par
2, lines 3 to 4
- p 8-12, Sec
8 3 6, line 3
- p 8-19, line 6
- p 9-1, par
2, last
sentence
- p 9-2, par 1
- p 9-3, par 3,
line 6
- Verify that the Phase I RFI/RI workplan does indeed address modeling parameter needs specifically for contaminant release. If it does not, revise accordingly
- Delete the paragraph beginning with "Preliminary COCs ..". COCs result from a process developed by the RFP Risk Assessment Technical Working Group including DOE, EPA, CDH, USFWS and Colorado Division of Wildlife. The selection criteria for COCs for human health should be inserted in the text. Dennis Smith of EG&G/RF (ext. 5958) should be contacted for this item
- Insert "land" between "future" and "uses"
- Replace "oral" with "ingestion"
- Particle-size distribution and surface soil moisture content are important for evaluating wind dispersion of contaminated soil. Will we be gathering site-specific information or using literature values? The use of literature values will increase the uncertainty of any air dispersion modeling. The procedure should be stated in the workplan
- Precipitation infiltration and the soil pH profile will have a significant impact on contaminant leaching. How will we be addressing these items? This should be stated in the workplan
- Insert "and CDH" between "EPA" and "may be"
- The statement that "Variance introduced through model use will not exceed the variance introduced by exposure factors and/or toxicity factors" is very strong. I do not feel that it is realistic. Reword to state that reasonable efforts will be made to minimize the variance introduced through model use. Also, we currently lack variance data for most chemical toxicity factors
- Insert "and CDH" between "EPA office" and "for approval"
- Should read "Monte-Carlo"
- This statement also applies to groundwater, surface water, geologic and air resources. Similar statements for these resources should be made elsewhere in this workplan after it is verified that the workplan was designed to be consistent with the NRDA process for these resources as well as biological resources
- Include EG&G Rocky Flats, Inc's April 1991 report on T&E species
- Ongoing baseline study of what? Revise text

p 9-5, Secs 9 1 1 1, 9 1.1.2 and 9 1.1 3	The 1) DQO process, 2) review, evaluation, and summary of available chemical and ecological data and identification of data gaps, and 3) the preliminary field field surveys were to be completed prior to the development of this work plan Why were these tasks not done? Note that the Risk Assessment Technical Working Group allowed OUs 1, 2 and 5 workplans an exemption from this However, DOE and EG&G agreed that all subsequent work plans would be prepared after these items were completed.
p 9-8, Sec 9 1 2, part 2, line 1	Spell out CRL
p 9-13, last line	Spell out AWQC
p 9-52, Sec 9 2 1 1, line 6	Add the U.S Fish and Wildlife Service
p 9-54, line 1	Add the U S Fish and Wildlife Service.
p 9-55, par 2	With regard to reference areas, SOP 5 13 Section 6 1 5 should be referenced in the text
p 9-76, par 4	The text should include appropriate details of the specific statistical tests and ancillary information (e g., level of significance, power, etc)
p 9-86, Sec 9 3 2 1, par 2	The FSP should identify all sampling locations for vegetation
p 9-87, par 3	The FSP should identify transect locations for quantitative community surveys
p 9-87, Sec. 9 3 2 2, par 1	The FSP should identify all sampling locations
p. 9-89, Sec. 9 3 2 3	The FSP should identify all small mammal sampling and bird survey locations
p 9-89, Sec. 9 3 2 5	The locations for terrestrial and aquatic sampling are not presented in the FSP
p 9-90, Sec 9 3 3, last sentence	The SOP for reference area selection currently exists within SOP 5 13 State the exact location in the text.
p 9-93, Sec 9 3 4 2	State the SOPs terrestrial wildlife and invertebrates in the text.
p 9-95, Sec 9 3 4 5	State the SOP for fish in the text

ADDITIONAL COMMENTS

The BRAP will include dose calculations from radionuclides consistent with DOE Order 5400 5 and Chapter 10 of the 1989 EPA document entitled, "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (part A), Interim Final".